

REMARKS

The Office Action dated September 22, 2004, included the following rejections, objections, and comments:

1. The drawing were objected to because the reference character "11" has been used to designate different items in the figures, and reference character "13" was used to designate different items in the figures.
2. Claims 1-8 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 9-31 of co-pending application number 10/424,120.
3. Claims 1-8 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-12 of U.S. Patent Number 6,720,531.
4. Claims 1-3 and 6 were rejected under 35 USC § 102(b) as being anticipated by U.S. 4,061,827 (Gould).
5. Claims 4-5 and 7-8 were rejected under 35 USC § 103(a) as being unpatentable over Gould.

In response to these rejections, objections, and comments, and in view of the above Amendments, Applicant provides the following Remarks:

1. Objection to the Drawings

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(4) because the reference character "11" was used to designate different items in the figures, and the reference character "13" has been used to designate different items in the figures.

Applicant has reviewed the application and agrees there is an inconsistency in the reference numbers of the figures. Therefore, Applicant has amended FIGS. 2A, 2B, 3A, and 3B to indicate the PTC yarns with the reference character "110", the non-conductive yarns with the reference character "130" and the bus yarns as reference character "120". Applicant has also submitted herewith amended paragraphs on pages 7 and 8 of the specification which refer to FIGS. 2A, 2B, 3A, and 3B, to be consistent with the renumbering of the figures. Applicant respectfully submits that the amendments to the drawings and the specification have now overcome the objection under 37 CFR 1.84(p)(4).

2. Provisional Rejection of Claims 1-8 Over Co-Pending Application Number 10/424,120.

Claims 1-8 were provisionally rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over Claims 9-31 of co-pending application number 10/424,120. In view of the provisional nature of the rejection, Applicant respectfully submits that it is premature to submit a Terminal Disclaimer. However, when all other issues have been resolved, Applicant will submit the appropriate Terminal Disclaimers.

3. Provisional Rejection of Claims 1-8 as an Obvious-Type Patenting Over U.S. 6,720,539.

Claims 1-8 were provisionally rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over U.S. Patent Number 6,720,539. In view of the provisional nature of the rejection, Applicant respectfully submits that it is premature to submit a Terminal Disclaimer. However, when all other issues have been resolved, Applicant will submit the appropriate Terminal Disclaimers.

4. Rejection of Claims 1-3 and 6 under 35 USC § 102(b)

Claims 1-3 and 6 were rejected under 35 USC § 102(b) as being anticipated by Gould. The present invention has been amended to specify that the PTC yarn has a core and a positive temperature coefficient of resistance (PTCR) sheath, the sheath including distinct electrical conductors that are mixed with a thermal expansive matrix that has a higher coefficient of expansion than the distinct electrical conductors, and that the PTC yarn has a resistance value from about 0.1 ohms per inch to about 2,500 ohms per inch.

The only disclosure of the resistance of the yarns in Gould is 10×10^6 ohms per centimeter (25.4×10^6 ohms per inch), to 9×10^6 ohms per centimeter (22.9×10^6 ohms per inch), and 5.5×10^6 ohms per centimeter (14×10^6 ohms per inch). There is no teaching, suggestion, or motive in Gould of the desirability of a resistance value from about 0.1 ohms per inch to about 2,500 ohms per inch. The dramatic scale of the difference the resistance in Gould and the resistance of the present invention, is believed to be attributable to the method in which Gould places the conductive particles in the outer regions of the fiber. By scattering fibers on a swelling outer surface,

conductivity in the range of the claimed invention would be, at best, difficult. Because of the intermixing of distinct electrical connectors in a thermal expansive matrix that is applied to a core, the present invention is able to easily obtain the resistance values claimed. For these reasons, Applicant respectfully submits that the claimed invention is not anticipated by, or obvious over, Gould.

5. Rejection of Claims 4-5 and 7-8 under 35 USC § 103(a)

Claims 4-5 and 7-8 were rejected under 35 USC § 103(a) as being unpatentable over Gould. As said forth above, Applicant respectfully submits that the claimed invention is not taught or suggested by Gould. Additionally, Applicant respectfully submits that the laying of a PTC yarn in a knit structure is not obvious in view of Gould. Although Gould may indicate that a PTC fiber can be used in a knit material, there is no teaching, suggestion, or motive to specifically lay that yarn within the loops of a knit material. Therefore, Applicant respectfully submits that the claimed invention is not obvious over Gould.